A New Species of Lepidosaphes Attacking Dendrobium Orchids in Hawaii and California (Homoptera: Coccoidea: Diaspididae)

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During 1944 the California State Department of Agriculture, Bureau of Entomology and Plant Quarantine received for determination a species of scale insect heavily infesting pseudobulbs of *Dendrobium dearei* orchids at Honolulu, Hawaii. The orchid plants were presumably treated before entry into California, because no living scale insects were observed on the submitted plant portions. The material was submitted by D. T. Fullaway, Territorial Entomologist, who in correspondence, indicated the insect had been observed for several years doing considerable damage to orchid plants. Mr. Fullaway was under the impression that the species concerned might be the same as one recently described by the author as *Lepidosaphes mackieana.* An examination of the submitted specimens indicates the species is not *mackieana,* but instead, represents, as here interpreted, still another new species of this group. Specimens submitted early in 1944 by M. R. Bell, Inspector State Nursery Service, from *Dendrobium dearei* in a nursery at San Leandro, Alameda County, California were found to be identical with this species.

Since this scale insect has been causing damage to *Dendrobium* orchids in Hawaii, Mr. Fullaway has kindly suggested its description be included in the Proceedings of the Hawaiian Entomological Society. A description of the insect follows:

Lepidosaphes noxia McKenzie, new species (figure 1)

HISTORICAL BACKGROUND. This species of *Lepidosaphes* was first collected at San Leandro, Alameda County, California in a commercial orchid nursery, on *Dendrobium dearei,* February 9, 1944 by M. R. Bell, State Nursery Inspector. Additional insect material was requested of Mr. Bell, and on March 8, 1944 a second collection was made by him from the same plants in the same nursery. Still another collection was made from the same host and locality on June 26, 1944 by J. B. Steinweden of this Department, and observations on extent and intensity of infestation were made by him. He has indicated that approximately 12 plants were found lightly infested with the scale, and that it was apparently being held in control in the nursery at San Leandro.

Prepared slide mounts of this species collected at Honolulu, Hawaii on *Dendrobium dearei* during April 1944 by William Kirch were submitted to this office for determination during May 1944 by D. T. Fullaway, Territorial Entomologist. Upon request, subsequent treated fresh material collected at Honolulu, July 19, 1944 by William Kirch, on pseudobulbs of the same host, was sent to the author by Mr. Fullaway. Mr. Fullaway indicated by correspond-

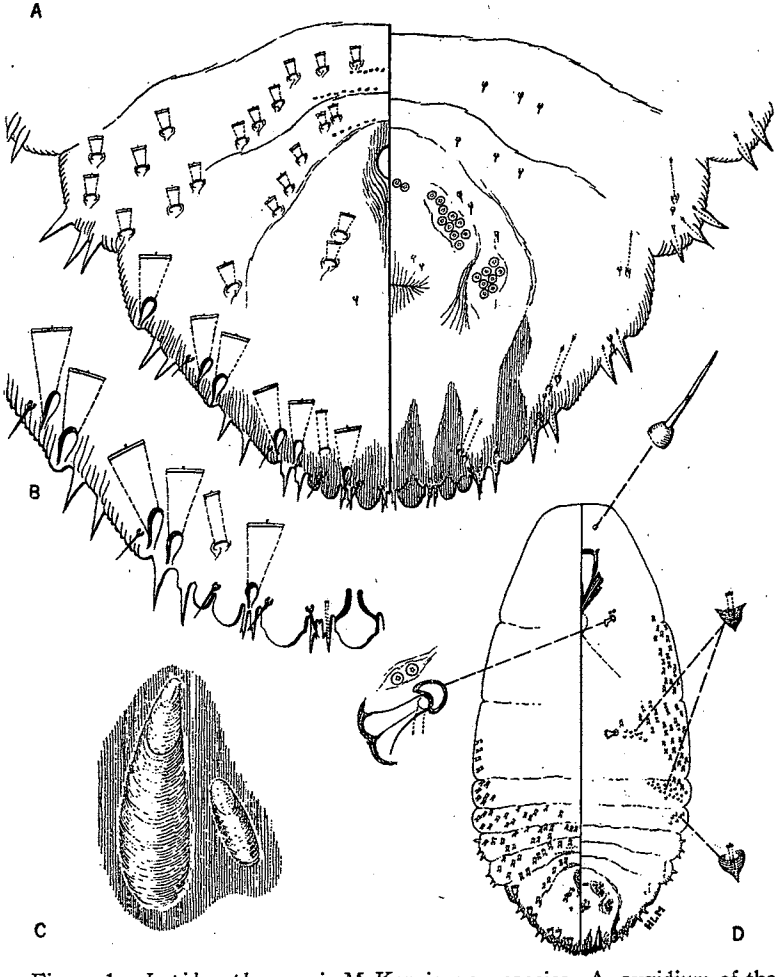

Figure 1.—*Lepidosaphes noxia* McKenzie, new species. A, pygidium of the adult female; B, details of the dorsal aspect of the pygidial margin; C, habit; D, body of adult female. Unlettered details are connected to their points of origin by guide lines and should be readily identifiable.

ence, that the scale has been noticed for several years doing considerable damage to orchid plants of the *Dendrobium* group. The infested pseudobulb material sent to the present author by Mr. Fullaway showed marked damage to the orchid tissue particularly where the leaves are attached to the leads. This visible injury causes death to the leaves.

HOSTS AND DISTRIBUTION. Type and paratypes from orchid, *Dendrobium dearei*, in a commercial orchid nursery, San Leandro, Alameda County, California, collected February 9 and March 8, 1944 by M. R. Bell, State Nursery Inspector. Additional paratypes on pseudobulbs of the same host are available from Honolulu, Hawaii, collected July 19, 1944 by William Kirch.

HABIT. Scale insects occurring on the leads of orchids concentrating particularly where the leaf partially surrounds the lead. Scale of the female averages about 2.2 mm. long, pale brown, exuvium terminal; male smaller, much lighter in color than female, exuvium terminal.

RECOGNITION CHARACTERS. Length as mounted on microscope slide averages approximately 1.25 mm.; derm membranous at full maturity; abdominal segments but little produced laterally; antenna one-spined; perivulvar pores present in five groups, anterior groups ranging from 3-7, average 4, median ranging from 7-14, average 10, posterior group ranging from 4-9, average 7; median pygidial lobes relatively small, low and rounded apically, slightly once-notched on each side, second lobes bilobed, quite large and prominent in comparison with median pair; dorsal macroducts much smaller than marginal ones of pygidium, occurring across prepygidial abdominal segments 2-4 inclusive, and marginally only on first abdominal segment and metathorax, submedian macroduct group on sixth segment containing usually two ducts, on each side, a smaller, dorsal macroduct present slightly anterior to second pygidial lobes; ventral microducts and gland tubercles situated as indicated in accompanying figure.

NOTES. *Lepidosaphes noxia* will run to *L. newsteadi* (Sulc) in Ferris' key to species of this group, included in his Atlas of Scale Insects of North America published in 1942. It is structurally quite similar to that species except for its possession of a small dorsal macroduct located slightly anterior to the second pygidial lobes, and more numerous median groups of perivulvar pores. It is also closely related to *L. mackieana* McKenzie, but differs in the character of the median lobes which are only slightly once-notched on each side, whereas in *mackieana* they are laterally serrate, and also in the possession of only one-spined antenna as compared to two-spined in *mackieana*.

The type specimen of *Lepidosaphes noxia* will be deposited in the State Department of Agriculture collection at Sacramento, California, and paratypes in the Federal Bureau of Entomology and Plant Quarantine collection at Washington, D.C.

The accompanying figures were prepared by the author from type material.